

(19) 世界知的所有権機関  
国際事務局(43) 国際公開日  
2004 年 4 月 15 日 (15.04.2004)

PCT

(10) 国際公開番号  
WO 2004/032251 A1(51) 国際特許分類<sup>7</sup>: H01L 33/00

(21) 国際出願番号: PCT/JP2003/012119

(22) 国際出願日: 2003 年 9 月 22 日 (22.09.2003)

(25) 国際出願の言語: 日本語

(26) 国際公開の言語: 日本語

(30) 優先権データ:  
特願2002-286089 2002 年 9 月 30 日 (30.09.2002) JP

(71) 出願人 (米国を除く全ての指定国について): 豊田合成株式会社 (TOYODA GOSEI CO., LTD.) [JP/JP]; 〒452-8564 愛知県 西春日井郡春日町 大字落合字長畑 1 番地 Aichi (JP).

(72) 発明者; および

(75) 発明者/出願人 (米国についてのみ): 安川 武正 (YASUKAWA, Takemasa) [JP/JP]; 〒452-8564 愛知県 西春

日井郡春日町 大字落合字長畑 1 番地 豊田合成株式会社内 Aichi (JP). 下西 正太 (SHIMONISHI, Shota) [JP/JP]; 〒452-8564 愛知県 西春日井郡春日町 大字落合字長畑 1 番地 豊田合成株式会社内 Aichi (JP). 太田 光一 (OTA, Koichi) [JP/JP]; 〒452-8564 愛知県 西春日井郡春日町 大字落合字長畑 1 番地 豊田合成株式会社内 Aichi (JP).

(74) 代理人: 平田 忠雄 (HIRATA, Tadao); 〒102-0082 東京都千代田区一番町 2 番地 パークサイドハウス Tokyo (JP).

(81) 指定国 (国内): CN, KR, US.

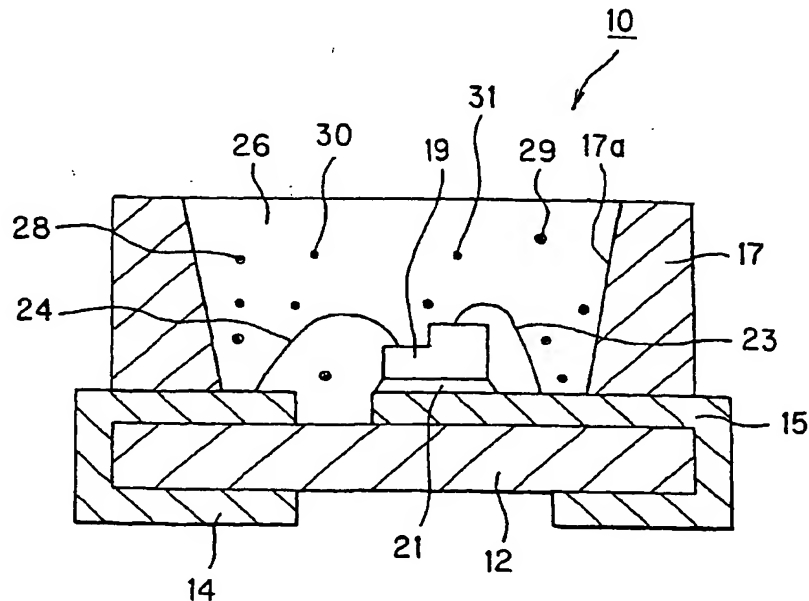
(84) 指定国 (広域): ヨーロッパ特許 (AT, DE, FR, GB, NL).

添付公開書類:  
一 国際調査報告書

/続葉有/

(54) Title: WHITE LIGHT EMITTING DEVICE

(54) 発明の名称: 白色発光装置



(57) Abstract: A purple LED (19) is fixed onto lead frames (14, 15) in the cup (17a) of a frame (17) using a mount (21), and the purple LED (19) is sealed by filling a sealant (26) of transparent resin into the cup (17a). Red/green/blue phosphors (28-30) that absorb a light emitted by the purple LED (19) and emit lights having red, green, blue wavelengths different from the wavelength of this absorbed light are mixed into the sealant (26). A yellow phosphor (31) that absorbs a light emitted by the purple LED (19) and emits a light having a yellow wavelength different from the wavelength of this absorbed light is additionally mixed into the sealant (26) in such a white light emitting device.

/続葉有/

BEST AVAILABLE COPY

WO 2004/032251 A1

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/12119

A. CLASSIFICATION OF SUBJECT MATTER  
Int.Cl.<sup>7</sup> H01L33/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
Int.Cl.<sup>7</sup> H01L33/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Toroku Jitsuyo Shinan Koho	1994-2003
Kokai Jitsuyo Shinan Koho	1971-2003	Jitsuyo Shinan Toroku Koho	1996-2003

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/89000 A1 (GENERAL ELECTRIC CO.), 22 November, 2001 (22.11.01), Page 3, line 14 to page 4, line 17; Figs. 2 to 4 & CA 2375069 A & AU 6155301 A & BR 106639 A & CZ 20020167 A & CN 1386306 T & EP 1295347 A	1-4, 8, 9
Y	JP 2002-76445 A (Sanken Denki Kabushiki Kaisha), 15 March, 2002 (15.03.02), Full text; all drawings (Family: none)	1-15
Y	JP 11-39917 A (Hewlett-Packard Co.), 12 February, 1999 (12.02.99), Par. Nos. [0013] to [0015] (Family: none)	1-15

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

## \* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search  
22 December, 2003 (22.12.03)Date of mailing of the international search report  
20 January, 2004 (20.01.04)Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

Form PCT/ISA/210 (second sheet) (July 1998)

BEST AVAILABLE COPY

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/12119

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 1199757 A2 (Philips Corporate Intellectual Property GmbH.), 24 April, 2002 (24.04.02), Par. No. [0029] & DE 10051242 A & CN 1349262 A & JP 2002-223008 A	5-9,11
Y	JP 2001-308393 A (Nichia Chemical Industries, Ltd.), 02 November, 2001 (02.11.01), Par. Nos. [0011], [0028] (Family: none)	5-8,11
Y	JP 2001-352101 A (Nichia Chemical Industries, Ltd.), 21 December, 2001 (21.12.01), Par. Nos. [0025] to [0029] (Family: none)	5-7,11
Y	WO 01/59851 A1 (NIPPON LEIZ Kabushiki Kaisha), 16 August, 2001 (16.08.01), Full text; all drawings & JP 2001-223388 A & AU 3226101 A & EP 1187228 A1 & CN 1366714 T	10
Y	WO 00/79605 A1 (Citizen Electronics Co., Ltd.), 28 December, 2000 (28.12.00), Full text; all drawings & JP 2001-36150 A & JP 2001-24238 A & EP 1107321 A1 & CN 1315057 T	10
Y	JP 2000-156526 A (Asahi Rubber Corp.), 06 June, 2000 (06.06.00), Figs. 3, 10 (Family: none)	13-15
Y	JP 2001-345482 A (Toshiba Corp.), 14 December, 2001 (14.12.01), Full text; all drawings (Family: none)	15

Form PCT/ISA/210 (continuation of second sheet) (July 1998)

BEST AVAILABLE COPY